

# **ANSWER KEY**

## **UNIT 1: Structure of Human Eye**

Session 1: Anatomy of Human Eye

1. Cornea
2. Vitreous
3. Sclera

Session 2: Field of Vision and Dynamic Range of Human Eye

1. Field of vision
2. Mono-ocular

Session 3: Movements of Human Eye

1. Fovea centralis
2. Double vision
3. Rectus

## **UNIT 2: Obtaining Case History of a Patient**

Session 1: Recording Medical History of a Patient

1. Patient
2. Health
3. Illness
4. Medical
5. Surgeries
6. Cataract

Session 2: Documenting a Patient's Medical History

1. Visual acuity
2. Retina
3. Glaucoma

Session 3: Integrating Medical History and Physical Examination for Treatment Plans

1. Patient
2. Blepharitis or allergy

Session 4: Assessing Functionality of a Patient's Eyes

1. Pressure of eye
2. Cornea
3. Imaging
4. Eye

## **UNIT 3: Common Eye Problems**

Session 1: Common Eye Problems and Infections

1. Pathogens
2. Allergies
3. Eye lids
4. Conjunctivitis

Session 2: Symptoms of Common Eye Problems

1. Nearby
2. Tears

Session 3: Eye Injuries

1. Accidental
2. Mechanical

- 3. Source
- 4. Traumatic

## NOTES

### **UNIT 4: Measuring Visual Acuity**

- Session 1: Meaning of Visual Acuity
  - 1. Ametropia
  - 2. Myopia or hypermetropia
- Session 2: Process of Measuring Visual Acuity
  - 1. 6 metres
  - 2. Occluder

### **UNIT 5: Basic Visual Assessment**

- Session 2: Basic Examination for Eye Diseases
  - 1. Visual field testing
  - 2. Phoropter
  - 3. Objective refraction
- Session 3: Eye Examination
  - 1. Colour vision
- Session 4: Visual Assessment of the Eye
  - 2. Ophthalmoscopy
  - 3. +13 D

### **UNIT 6: Assessing Refractive Status**

- Session 1: Meaning of Refractive Status and Refraction
  - 1. Keratometer
  - 2. Automated-refractor, eye
- Session 2: Process of Retinoscopy
  - 1. Static
  - 2. Book retinoscopy
  - 3. Retinoscope
- Session 3: Operation of Auto-refractometer
  - 1. Automated-refractometer
  - 2. Cycloplegic, proparacaine

### **UNIT 7: Spectacles, Optical Prescription and Contact Lenses**

- Session 1: Reasons for Vision Disorders
  - 1. Corneal curvature, lens index
  - 2. Distance, intermediate, near
  - 3. Optical correction, defective
  - 4. Convex
  - 5. Optical, Dioptre
- Session 2: Optical Prescription Notation
  - 1. Standard format
  - 2. D, Dioptre
  - 3. Oculus dexter
- Session 3: Principle of Foci Meter and Types
  - 1. Target viewed
  - 2. Opposite
  - 3. Vertex power, prismatic effects

## ANSWER KEY



## GLOSSARY

**Aaberrometer:** A device that can identify common and more obscure vision errors by measuring the way light waves travel through the eye's optical system.

**Accident Prevention:** The systematic application of recognised principles to reduce incidents, accidents, or the accident potential of a system or organisation.

**Acetate:** Type of plastic often used in eyeglass frames.

**Accommodation disorder:** It refers to the eye's ability to automatically change focus from seeing at a distance to seeing at near. Accommodation disorders have a variety of causes. Symptoms include blurred vision, double vision, eye strain, headache, fatigue and difficulty concentrating (particularly while reading). Presbyopia is an accommodation disorder that affects everyone if they become old enough, since its causes relate to the aging of the eyes.

**Acute Effect:** A change that occurs in the body within a relatively short time (minutes, hours, days) following exposure to a substance.

**Acute Exposure:** A single exposure to a hazardous agent.

**Area Sampling:** Collection and analysis of representative samples of air in general work areas in order to determine the concentrations of any contaminants that are present.

**Bifocal:** Lens with one segment for near vision and one segment for far vision. The term 'bifocal' can apply to both eyeglass lenses and contact lenses.

**Binocular vision:** Ability of both eyes to work together to achieve proper focus, depth perception and range of vision.

**Biological Agent:** Any living organism (for example, virus or bacteria) that affects the body, a part of the body, or any of its functions. The effects may be beneficial or harmful.

**Blind Spot:** The beginning of the optic nerve in the retina is called the optic nerve head or optic disc. Since there are no photoreceptors (cones and rods) in the optic nerve head, this area of the retina cannot respond to light stimulation. As a result, it is known as the "blind spot," and everybody has one in each eye.

**Cataract:** Clouding of the natural lens of the eye, usually caused by aging in conjunction with other risk factors, such as exposure to the sun's UV rays, smoking, steroid intake and diabetes. Symptoms include blurred vision, glare, halos around lights, colours that are less bright, a cloudy spot in your vision and, sometimes, temporary vision improvement. Read more about cataracts.

**Chemical Agent:** A chemical substance that affects the body, a part of the body, or any of its functions. The effects may be beneficial or harmful.

**Chronic Effect:** A change that occurs in the body over a relatively long time (weeks, months, years) following repeated exposure or a single over exposure to a substance.

**Chronic Exposure:** Repeated exposure to a hazardous agent.

## NOTES

**Ciliary Body:** An annular (ring-like) structure on the inner surface of the anterior wall of the eyeball, contained within the uveal tract and composed largely of the ciliary muscle and bearing the ciliary processes.

**Dust:** Fine particles of a solid that can remain suspended in air. The particle size of a dust is larger than that of a fume.

**Ergonomics:** An applied science that studies the interaction between people and the work environment. It focuses on matching the job to the worker.

**Fovea:** In the human eye the term fovea (or fovea centralis) is the “pit” in the retina that allows for maximum acuity of vision. The human fovea has a diameter of about 1.0 mm with a high concentration of cone photoreceptors.

**Fume:** Finely divided solid particles that are formed when a hot metal vapour cools and condenses.

**Hazard:** The potential of any machine, equipment, process, material (including biological and chemical) or physical factor that may cause harm to people, or damage to property or the environment.

**Hazardous Material:** Any substance that may produce adverse health and/or safety effects to people or the environment.

**Health:** The World Health Organization has defined health as more than just the absence of disease. Rather, it is a state of complete physical, mental and social well being.

**Ingestion:** The swallowing of a substance.

**Inhalation:** The breathing in of an airborne gas, vapour, fume, mist or dust.

**Injection:** To force or drive liquid or gas into the body

**Iris:** The opaque muscular contractile diaphragm that is suspended in the aqueous humor in front of the lens of the eye; perforated by the pupil and continuous peripherally with the ciliary body; possesses a deeply pigmented posterior surface, which excludes the passage of light except through the pupil, and a coloured anterior surface which determines the colour of the eye

**Limbus:** Junction between the cornea and the sclera

**Macula:** The most sensitive part of the central retina, responsible for visual acuity and colour vision.

**Reducing Agent:** A substance that accepts oxygen or gives up hydrogen during a chemical reaction.

**Risk:** The probability of a worker suffering an injury or health problem, or of damage occurring to property or the environment as a result of exposure to or contact with a hazard.

**Sampling:** The process of taking small representative quantities of a gas, liquid, or solid for the purpose of analysis.

**Solvent:** A substance that dissolves other substances. Many solvents are flammable.

**Substitution:** The replacement of toxic or hazardous materials, equipment or processes with those that are less harmful.

**Toxic:** Harmful or poisonous.

## GLOSSARY



## LIST OF CREDITS

**Vijay Anand Joshi**

**Unit 1**

Fig.1.5

**Unit 4**

Fig.4.4

**Unit 5**

Fig.5.1, Fig.5.2, Fig.5.3

**Unit 6**

Fig.6.5

**Chetanya Koli**

**Unit 2**

Fig. 2.1

**JP Government Hospital, Bhopal**

**Unit 5**

Fig 5.5, 5.6, 5.7

**Google Creative Commons**

**Unit 1**

Fig 1.1	<a href="https://goo.gl/pjqkgf">https://goo.gl/pjqkgf</a>
Fig 1.3	<a href="https://goo.gl/ip3oRH">https://goo.gl/ip3oRH</a>
Fig 1.4	<a href="https://goo.gl/WVBpN5">https://goo.gl/WVBpN5</a>

**Unit 3**

Fig 3.1	<a href="https://goo.gl/PRcT7o">https://goo.gl/PRcT7o</a>
Fig 3.2	<a href="https://goo.gl/YoG9D6">https://goo.gl/YoG9D6</a>
Fig 3.3	<a href="https://goo.gl/q9ivao">https://goo.gl/q9ivao</a>
Fig 3.4	<a href="https://goo.gl/gzrDXb">https://goo.gl/gzrDXb</a>
Fig 3.5	<a href="https://goo.gl/jpRwKd">https://goo.gl/jpRwKd</a>
Fig 3.6	<a href="https://goo.gl/Gaj8R1">https://goo.gl/Gaj8R1</a>
Fig 3.7	<a href="https://goo.gl/se2bgL">https://goo.gl/se2bgL</a>
Fig 3.8	<a href="https://goo.gl/C69xdG">https://goo.gl/C69xdG</a>

**Unit 4**

Fig 4.1	<a href="https://goo.gl/gD4c1W">https://goo.gl/gD4c1W</a>
Fig 4.2	<a href="https://goo.gl/vmMkge">https://goo.gl/vmMkge</a>
Fig 4.3	<a href="https://goo.gl/sHmKwT">https://goo.gl/sHmKwT</a>

**Unit 5**

Fig 5.4	<a href="https://goo.gl/v5P3Ne">https://goo.gl/v5P3Ne</a>
---------	---

**Unit 6**

Fig 6.1	<a href="https://goo.gl/zUtV4r">https://goo.gl/zUtV4r</a>
Fig 6.2	<a href="https://goo.gl/NLA9g7">https://goo.gl/NLA9g7</a>
Fig 6.3	<a href="https://goo.gl/yYQJwM">https://goo.gl/yYQJwM</a>
Fig 6.4	<a href="https://goo.gl/eFpJYc">https://goo.gl/eFpJYc</a>

**Unit 7**

Fig 7.1	<a href="https://goo.gl/rVSezg">https://goo.gl/rVSezg</a>
Fig 7.2	<a href="https://goo.gl/AQTwcu">https://goo.gl/AQTwcu</a>

